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Attendees:	-NHDOT- Jeff Brillhart Bill Hauser Charlie Hood John Butler Marc Laurin - VHB- Bruce Tasker Tony Grande Resource Agencies See list	Date/Time:	July 19, 2000 9:00 AM
		Project No.:	Salem – Manchester 50885 10418-C
Place:	NHDOT----Design Conference Room	Re:	Resource Agency Meeting–I-93, south of Exit 4 thru Exit 5 to End of project [RA Mtg # 5]
		Notes taken by:	Bruce Tasker/Tony Grande Jeff Brillhart

Jeff Brillhart started the meeting noting that the purpose of the meeting is to review and discuss the design concepts (with the accommodation of rail and HOV opportunities) for the I-93 improvements from the Derry /Windham town line thru Exit 5 in Londonderry and connecting to the I-93/Bodwell Road improvements currently under construction.

Jeff noted that the layouts developed thus far are still conceptual and generally consider the minimization of property and resource impacts to justify widening to one side or the other. Additional design work has started to better understand the constructability and maintenance of traffic elements within the corridor concepts. These elements may alter the layouts now being presented.

Also, VHB and the Department have been identifying alternatives and combinations of alternatives that will be evaluated as part of the I-93 ridership analysis. These ridership evaluations will include highway widening (including high occupancy vehicle lanes), bus

service, rail service and combinations of these modes of travel. These alternatives will be reviewed with the ATF and Resource Agencies next month.

Tony Grande reviewed the preliminary typical sections and engineering design criteria that have been developed to accommodate the I-93 widening, the HOV lanes and the rail elements along the I-93 corridor. Generally the footprint of the proposed rail corridor layout depending upon constraints, would vary from 50' (if the rail is on structure), to 60' (if a closed drainage system is required), to 87' (if width is available for an open drainage system). The intent for the most part is to locate the proposed rail corridor in the median.

Tony presented the design beginning at the Derry / Londonderry Town line. He pointed out the controls that drive the design including the pond just south of the Windham/Derry townline, the reconstructed bridges at North Lowell Rd., Fordway Extension, and Kendall Pond Rd. as well as ledge areas and Beaver Brook. In most areas, there is enough width to accommodate the rail and HOV typical in the median although just south of Windham/Derry townline, a small pond on the west side of I-93 forces the widening to the east. Between Fordway Extension and Kendall Pond Rd. (Sta. 1555+00) the NB barrel is 20-25 ft. higher than the SB barrel. The options were presented in this area as follows:

- The easterly edge of pavement is held from the Windham/Derry townline past the prime wetland area east of the NB barrel. The NB barrel is widened toward the median, the SB barrel is widened to the outside. A 60-ft. rail corridor is provided for in this area. With this option the rail will follow the SB barrel profile, as there is a 5% grade on the NB barrel near Kendall Pond Rd. A 28-ft. high retaining wall will be required because of the 20-25 ft. grade difference between NB and SB barrels for approximately 2000'. Soundwalls may need to be constructed in this area and may impact the overall I-93 widening footprint similar to the soundwall currently under construction in the vicinity of Bodwell Road. The easterly edge of the NB barrel is held proceeding northerly (widening to the west) until the Londonderry sewer treatment facility, at which point the westerly edge of the SB barrel is held and all widening occurs to the east. Just south of Exit 4 the 60-ft rail corridor width widens to 87-ft. to accommodate an opportunity for a future rail station just north of Exit 4.

- An alternative to constructing the retaining wall in the median discussed above, would shift the SB barrel to the west just before the bridges at Fordway Extension and tying back in just south of the bridges to the north at Kendall Pond Road. This would reduce the need for a retaining wall in the median, but would result in a larger ledge cut along the west side of I-93. This option would appear to be easier to construct as far as maintenance of traffic.

At the Exit 4 interchange (reconstructed approximately 10 years ago), one concept is to hold the westerly edge of pavement and widen easterly. (See interchange discussion.)

The Ash Street (Pillsbury Road) Bridge over I-93 would be replaced to accommodate 4-lanes (incl. HOV) and room for the rail on I-93 (current width will allow for only 3 lanes in each direction). An alternative to realign Ash Street/Pillsbury Road to the south to accommodate the bridge replacement while maintaining traffic on the existing bridge was also presented. The Ash Street/Pillsbury Road realignment will minimize impacts to wetlands in the area and to a potentially historic parcel in the NW quadrant. A home located in the SE quadrant of the Ash Street/ Pillsbury Road overpass with I-93 may possibly be impacted by the I-93 widening to the east.

In the area north of Ash Street/Pillsbury Road, the proposed widening transitions from the east to the west. The easterly edge of the existing NB barrel is then held as a control to minimize wetland impacts while all widening is accommodated to the west. Further to the north, the proposed NB barrel will be realigned parallel to the existing SB barrel in order to provide for the 87′ rail line footprint. This will utilize as much of the existing I-93 pavement as possible. Proposed soundwalls may be required near Trolley Car Lane and Season's Lane.

The next critical area is the I-93 bridges over Stonehenge Road, both bridges when rehabilitated a few years ago, were set up to allow for the widening of 2-lanes to either side of either bridge. The current design is to split the widening to the east and to the west on the NB bridge while widening the SB bridge all on the west. North of Stonehenge Road, the proposed design for the SB barrel holds the inside edge of the existing SB barrel with the widening to the west. The NB barrel widening transitions from widening along the inside of the median to widening to outside. An 87′ rail typical width is also maintained in this area to allow for a possible rail platform in the median. The future platform would be where the I-93 NB and SB profile grades are compatible with profile grades necessary for the development of a rail station platform. With the rail platform, a retaining wall in the median would be necessary due to grade differential of the NB and SB barrels. If a rail platform is not located in this area then the closed drainage system rail typical (60′) could be utilized to avoid placement of a retaining wall.

North of Exit 5 the accommodation for the I-93 rail corridor is not a consideration, as all of the rail options (discussed below) veer to the west in the vicinity of the Exit 5 interchange and connect to the existing rail line. Approximately 2 miles north of Exit 5, the NB 4 lane typical with HOV is transitioned to 4 general use lanes. Approximately one mile south of the I-93/I-293 split, the four general-purpose SB lanes are transitioned to three general-purpose lanes and an HOV lane. The current Bodwell Rd. project on the NB barrel adds a 12-foot lane and a 12-foot shoulder to the median from Sta. 2240+00 to the north. On the outside, the existing 10-foot shoulder is widened to a 12-foot shoulder. The ultimate Bodwell Rd. concept will allow I-93 NB to be widened to the outside with the addition of a shoulder, so in effect what we have is a split widening; a lane added to the inside now, and a lane added to the outside later.

For the SB barrel, the Bodwell Road project that is presently under construction reconstructs the existing 4-foot inside shoulder to a 12 foot shoulder, and on the outside, an additional 12 foot lane is being added. The ultimate concept adds an additional lane to the outside, so we have widening on both sides, but the majority of the widening is to the outside. The proposed I-93 widening design ties into the ultimate Bodwell Road area 4-lane concept.

Four options were identified in the area near Station 1898+00 near the Manchester/Londonderry town line where the median becomes narrow:

Option 1 holds the east outside edge of the NB barrel at Exit 5. The widening for both barrels transitions to the split widening of the Bodwell Road ultimate concept to the north through the curves just north of exit 5. The widening is increased by 6′ through this section by the addition of the HOV lane.

Option 2 transitions the widening on both barrels to the inside north of Exit 5 through the curves. The widening on the NB barrel then transitions through the existing curve to the outside through the critical area at Sta. 1898+00, near the Londonderry/Manchester town line. This option avoids

having to build a 10-foot high, 1000-foot long retaining wall in the median. The SB barrel widening transitions to match the Bodwell Road proposed ultimate widening.

Option 3 is similar to options 1and 2 in that the widening is shifted to the median after Exit 5. The difference is that the NB barrel continues to be widened to the median through the critical area at Sta. 1895+00 and the SB barrel is re-aligned to avoid having to build a retaining wall. Both barrels match into the Bodwell Road ultimate concept.

Option 4 If all widening is accomplished in the median area for each barrel, i.e. no widening to the outside, the widening would require a 10-foot high, 1000-foot long retaining wall in the median.

Tony described three rail options at Exit 5. One rail option would tie the I-93 median rail line into the existing rail line located in the northwest quadrant just west of the Exit 5 interchange. This layout requires the train to slow to 25 mph to negotiate the sharp horizontal curve and the abrupt grade change. A second option would extend the median rail further to the north within I-93 median before veering off to the west and tying back into the existing rail line approximately 6000 feet west of the Exit 5 interchange. A third option shows the I-93 median rail line veering west from I-93 approximately 4000 feet south of the Exit 5 interchange and tying back into the existing rail line approximately 3000 feet west of the interchange. The second and third concepts would allow the train to maintain 60 mph through the area.

Bruce Tasker presented the Exit 4 and 5 interchange areas.
At Exit 4, two interchange options were presented. The first option would retain the existing interchange operational configuration, and as discussed previously all widening to develop the improvements to I-93 would occur to the east. The basis of this concept is developed around the intent to retain as much of the Exit 4 interchange ramps and the bridge. Any widening to the west would require the complete removal of the existing NH 102 bridge over I-93. Widening to the west would also further compromise the already substandard SB on-loop ramp (minimum radius) and therefore any widening to the west would involve substantial ledge removal. With this option, NH 102 (including the bridge) would be widened to provide double left turn lanes for NH 102 EB to I-93 NB. Without the rail consideration, 4-lanes with HOV would be able to be constructed under the existing NH 102 bridge. Construction of 4-lanes with HOV and rail will require the NH 102 bridge over I-93 be replaced. Widening I-93 to the east will require a 1,500-ft. to 2000-ft. long retaining wall on the east side to avoid impacts to Wheeler Pond and the wetlands.

The second option assumes that all I-93 mainline widening would occur to the west to minimize impacts to Wheeler Pond and the associated wetlands adjacent to the pond. The existing NH 102 bridge over I-93 would be replaced with a new structure located adjacent to and south of the existing bridge. This would allow the existing bridge to be used for traffic control during construction. On the west side of I-93, the NH 102 WB to I-93 SB on-ramp would be completely reconstructed; the I-93 SB off-ramp would be partially reconstructed; and almost all of the NH 102 EB to I-93 SB on-ramp would be retained. Substantial ledge removal will be required during the reconstruction of the ramps in the NW quadrant of the interchange. On the east side of I-93, the I-93NB on-ramp and I-93 SB off-ramp would be completely reconstructed. Impacts to Wheeler pond would be substantially reduced when compared to the first option described.

At Exit 5, the interchange concepts for options 1 and 2 would retain the diamond-type interchange configuration. The rail in the median is carried through the interchange over NH 28, then passes under I-93 southbound to tie into the existing railroad right of way. This geometry will require the train to slow to 25 mph, which may or may not be acceptable depending on the

location of the rail station and the future needs of the railroad to be successful. Due to the widening of NH 28 to accommodate turning lanes, the span of the proposed railroad bridge over NH 28 will be approximately 150 ft. in length. A through truss structure will most likely be required for the railroad bridge over NH 28. The I-93 NB and SB barrels will be raised approximately (6 ft. max) to accommodate the additional structure depth needed to span over the widened NH 28 and over the future rail (I-93 SB barrel) transitioning out of the median and to the existing rail corridor to the west of I-93.

To the east of the Exit 5 interchange, NH 28 is realigned to replace the existing reverse curves with a simple curve. A 6-lane section will be carried through the interchange and transitioned down to a 5-lane section through the Liberty Drive intersection before transitioning back down to a two-lane section approximately 1000 feet south of Liberty Drive. This realignment leaves the restaurant and the businesses along the north side of NH 28 between Auburn Road and the relocated Liberty Road intersection with NH 28. With this improvement, NH 28 may have a raised median to channelize traffic at the Liberty Road and Auburn Road intersections, which would limit full access to the business and restaurant on the north side of NH 28 to right turn in and out. This option would require the acquisition of the Sunoco station. To the west of the Exit 5 interchange, the 6-lane section in the interchange area will be transitioned to 5-lanes through Perkins Road and then transitioned to the existing NH 28 2-lane section. Perkins Rd. is realigned approximately 200' to the west to align with the entrance to the transfer station driveway on NH 28. The realignment as shown would require the acquisition of three properties along the west side of Perkins Road. The proposed hotel drive would be retained.

A second option for NH 28 east of I-93 was presented that would generally retain the existing alignment along NH 28. This second option utilizes the same ramp improvements identified under option 1. This option allows the Sunoco Station operations to be maintained with some modification to the driveway access to NH 28. NH 28 may also have a raised median to channelize traffic operations at the Liberty Road and Auburn Road intersections, which would limit access to the Sunoco station on the west and homes on the east. The widening of NH 28 with this option as shown would require the acquisition of four properties along the east side of NH 28 near Liberty Road. South of Liberty Road along NH 28,approximately eight properties would have their frontage impacted.

A third interchange option for Exit 5 was presented as a very rough schematic concept. This design would realign the NB ramps to one major intersection opposite the proposed Liberty Road intersection. This option would provide additional separation from the SB ramps and direct access to an industrial area being developed off Liberty Road. This option would impact some wetlands southeast of the interchange, but possibly reduce impacts to wetlands in the NE quadrant of the Exit 5 Interchange. This option would also extend property impacts along NH 28 frontage to the south.

In addition to the I-93 mainline and interchange concepts, two concepts were presented that show potential locations for park and ride lots in the vicinity of Exit 5. The lots were developed with three basic assumptions:

- Connectivity to future rail
- Lot size to include bus station, and 500 to 600 spaces
- Close proximity to I-93 interchange for access and egress to I-93

Concept 1, park and ride is located in the SW quadrant of the I-93 Exit 5 interchange with the lot primarily fronting on I-93. The land needed to develop this facility would include approximately twenty acres from four private residential properties. Access would be provided via a 1000-foot connector road from Perkins Road, behind the new hotel. The lot size is approximately 700

spaces. A future pedestrian bridge will be required to access the future rail platform in the median, similar to what would be required at Exits 2 and 4.

Concept 2, park and ride is located in the NW quadrant of I-93 on property primarily used by Spartan Consolidated, Inc., a waste transfer facility. The land needed to develop this facility would include approximately sixteen acres from one private business. Access would be provided by a drive onto NH 28 opposite Perkins Road. The lot size is approximately 650 spaces. Access to the rail line (assuming it is located on the existing abandoned rail corridor) would be direct.

Questions and comments.

Rich Roach.	Rich asked if the existing rail corridor, that runs parallel to and east of I-93 was still under consideration.
Tony Grande.	Tony noted that the east rail corridor (Manchester/Lawrence Branch) and the west rail corridor (Mainline, Manchester to Nashua to Boston) are included in the ridership analysis.
Jeff Brillhart.	Jeff noted that the Rail Alternatives Report is nearing completion. Once the ridership evaluations are completed they will be incorporated into this report. The report addresses all three corridors, East, West, and I-93.
Harry Kinter.	Harry asked about the connectivity of the rail to the Manchester Airport?
Ken Kettenring.	Ken asked if a connection would be provided to downtown Manchester?
Bruce Tasker.	Bruce discussed a concept that could relocate a section of the existing east rail corridor to provide connectivity to downtown Manchester. The relocation is necessary because the existing rail line has been "cut-off "by the extension of Runway 6-24 as part of the Manchester Airport's Expansion. The rail relocation would begin just west of the Exit 5 interchange and move northerly behind the Londonderry School, then run parallel to and east of NH 28, passing east and around Runway 6-24 before reconnecting to the existing rail corridor prior to passing under I-293 and connecting to the downtown area. The Department's current thinking is that some type of transfer, via a shuttle would be required to access the airport terminal. Possibly a station would be located near the runway area or a station at Exit 5 would provide a local bus connection to the airport terminal. The west rail corridor which currently connects Manchester to Nashua and Boston may be a more desirable rail corridor to provide passenger rail service to the downtown Manchester area. This corridor is currently an active freight corridor and an independent project is looking at restoring passenger rail service between Nashua and Lowell MA (and on to Boston), and the possibility of extending service from Nashua to Merrimack and Manchester.
Rich Roach.	Rich noted that possibly some type of shuttle service could provide a connection from the west rail corridor directly into the airport.
Harry Kinter.	Harry suggested that the design for each of the project's interchange areas provide access control to better preserve the long term operation and safety of the interchange areas.

Claire Dodge.	Claire asked if the issue of flooding in Salem was being considered as part of the I-93 study.
Jeff Brillhart.	Jeff explained that the Department recognizes that flooding in Salem is an important issue and it will be studied in detail.
Rich Roach.	Rich indicated that his review of Wheeler Pond in the NE quadrant of Exit 4 leads him to believe that the pond is not of high value and impacts to the pond may be acceptable.
Mark Kern.	Mark Kern expressed concern over the difficulty of funding rail improvements given within New Hampshire's constitutional limitations on the use of State gas tax monies.
Jeff Brillhart.	Jeff explained that the constitution does complicate the means by which rail alternatives are funded.
Mark Kern.	Mark questioned whether the Department is planning on widening I-93 and looking at rail as a future option or whether the rail option could be implemented and possibly offset the need to widen the highway. Mark felt the "Purpose and Need" for this project should be clear to all stakeholders.
Ken Kettenring:	Ken explained that the Wetlands Bureau would very much prefer constructing transit options and not construct more highway lanes. Ken indicated that permitting the highway widening would be difficult if the transit options address the project purpose and need.
Rich Roach:	Rich explained that his understanding of the project was that it is essentially a highway widening project for which transit options were being looked at, but would not be constructed. He felt the project purpose and need stated as much, and the ACOE felt that such a project would be permittable. The ACOE would not require that the Department institute transit options even if they addressed the deficiencies associated with the highway.
Mark Kern:	Mark stated that the ACOE's position as stated by Rich was too narrow; not in keeping with the ACOE's original response (dated 11/13/92) to the project purpose and need; and not appropriate given the magnitude of the improvements proposed. The EPA would hope that the ACOE would require an alternative analysis that involved transit modes, and would require that those modes that do address the highway's deficiencies be instituted.
Jeff Brillhart:	Jeff explained that the Department is considering transit alternatives with an open mind, and intends to include transit related improvements as part of the project. With that said, based on information available, the Department expects that the transit options will not by themselves address the deficiencies associated with this segment of highway. The Department expects that additional study will confirm that this segment of I-93 will need to be widened. The ridership volumes and how they translate into reducing the lane needs of the highway is information currently being developed. This information will be presented at the August Resource Agency meeting.
Mark Kern:	Mark questioned whether Agencies' responses to the Scoping Report should be limited to just the material in the Scoping Report or include discussion about alternatives. Jeff said the Agencies should respond to the Scoping

Report. The Rationale Report will provide a forum for discussing alternatives. With that said, the Department is interested in whatever feedback the Agencies have to offer. Major issues of concern should be raised early so they can be addressed in a timely fashion.